

IN THE CLAIMS:

Please cancel claims 1–15 and 30–33, without prejudice. Please amend the remaining claims as follows, substituting any amended claim(s) for the corresponding pending claim(s):

Claims 1–15 (Canceled)

16. (Currently Amended) A vending method for determining whether a product is delivered, the method comprising ~~the steps of~~:

 sending a delivery signal to a product delivery system based on a customer ordering event;
 monitoring a delivery path that the ordered product travels to reach a product receiving location with a monitoring system located along the delivery path for detecting when the product passes through the delivery path, the monitoring system optically scanning the delivery path for the product transition using a plurality of discrete light beams each emitted by one of a plurality of light emitters and detected by at least one of a corresponding plurality of light detectors; and
 determining if the product was delivered to the receiving location.

17. (Currently Amended) The method of claim 16 wherein the monitoring further comprises ~~the~~ steps of:

transmitting ~~a signal~~ one or more light beams from ~~one or more signal emitting devices~~ at least one of the plurality of light emitters;

monitoring to receive the ~~signal~~ one or more light beams at ~~one or more signal detection devices~~ at least one of the corresponding light detectors; and

determining whether an interruption of ~~the signal~~ any of the light beams occurred.

18. (Currently Amended) The method of claim 17 ~~wherein the step of transmitting the signal further comprises the steps of~~ further comprising:

activating ~~the one or more signal emitting device~~ each of the light emitters in a sequential series; and

activating one or more of the corresponding ~~one or more signal detection device~~ corresponding to light detectors concurrently with the activated ~~corresponding~~ light emitter.

19. (Currently Amended) The method of claim 16 wherein the ~~step of monitoring~~ comprises using the light emitters emit an infrared signal.

20. (Currently Amended) The method of claim 16 further comprising ~~the steps of:~~

upon failure of a first attempt to deliver the product, attempting ~~[[a]]~~ redelivery of the product for one or more of a predetermined number of attempts, ~~wherein a first attempt to deliver the product failed;~~ and

providing the customer one or more alternative choices ~~if the redelivery attempt of the product failed~~ upon failure to deliver the product after the one or more predetermined number of attempts.

21. (Currently Amended) The method of claim 20 wherein the step of providing the customer with an alternative choice further comprises ~~the steps of:~~

providing the customer alternatively with a first choice to request a second product; and

providing the customer alternatively with a second choice to request a refund associated with the customer ordering event.

22. (Currently Amended) The method of claim 16 ~~wherein the step of sending a delivery signal comprises the step of~~ activating the monitoring system to monitor the delivery path in response to the delivery signal.

23. (Currently Amended) The method of claim 22 further comprising ~~the step of~~ deactivating the monitoring ~~at the conclusion of the customer ordering event~~ upon delivery of the product.

24. (Currently Amended) A vending machine method to deliver a product, the method comprising ~~the steps of~~:

determining that a product ordered by a customer was not delivered;

counting the number of failed attempts to deliver the product ordered by the customer; and

taking an action based on the number of attempts that the product was ordered by the customer but not delivered.

25. (Currently Amended) The method of claim 24, ~~wherein the step of taking an action further comprises the steps of~~ further comprising:

when the number of attempts reaches a predetermined number,

selectively preventing other orders from occurring for the product until a predetermined event ~~when the number of attempts reaches a predetermined number;~~ and

selectively disabling a monitoring system until a predetermined event ~~when the number of attempts reaches a predetermined number.~~

26. (Currently Amended) The method of claim 24, ~~wherein the step of taking an action further comprises the step of~~ further comprising offering a second product alternative.

27. (Currently Amended) The method of claim 25 further comprising ~~the step of~~ re-enabling the vending machine to accept other orders after a predetermined time has lapsed.

28. (Currently Amended) The method of claim 25 ~~wherein the step of determining further comprises~~ further comprising:

 sending a delivery signal to a product delivery system based on a customer-ordering event;
 monitoring a delivery path that the ordered product travels to reach a product receiving location; and
 determining if the product was delivered to the receiving location.

29. (Currently Amended) The method of claim 28 ~~wherein the step of monitoring further comprises the step of~~ optically monitoring the delivery path using an infrared signal.

Claims 30–33 (Canceled).

Please add the following new claims:

34. (Newly Added) The method of claim 18 wherein the plurality of light detectors are each aligned with a corresponding light emitter, the method further comprising:

detecting light beams emitted by each of the light emitters using the aligned light detector and at least one of two light detectors adjacent to the aligned light detector.

35. (Newly Added) The method of Claim 20, further comprising:

storing data associated with the customer ordering event and redelivery attempts.

36. (Newly Added) The method of Claim 24 wherein the action based on the number of attempts comprises preventing delivery of the product ordered by the customer.

37. (Newly Added) The method of Claim 24 wherein the action based on the number of attempts comprises preventing delivery of a set of products.

38. (Newly Added) The method of Claim 24 wherein the action based on the number of attempts comprises offering a refund of the purchase price of the product ordered by the customer.

39. (Newly Added) The method of Claim 24 wherein the action based on the number of attempts comprises selectively preventing delivery of one or more products until an action is taken by a service person and selectively disabling a monitoring system until an action is taken by a service person.

40. (Newly Added) A method of enabling verification of the delivery of a ordered product in a vending machine, the method comprising:

providing an ordering system for receiving a customer order of a product;

providing a product delivery system for sending the product, located in a first, product storage position, through a delivery path to a second, product receiving position;

providing a monitoring system located along the delivery path for detecting when the product passes through the delivery path from the first position to the second position, the monitoring system optically scanning the delivery path for the product transition using a plurality of discrete light beams each emitted by one of a plurality of light emitters and detected by at least one of a corresponding plurality of light detectors; and

providing a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order.

41. (Newly Added) The method of claim 40, wherein each light detector detects interruption of a light beam emitted by a corresponding light emitter.

42. (Newly Added) The method of claim 41, wherein the monitoring system includes a logic circuit electronically coupled to the optical circuitry for determining whether the product passed through the delivery path, the determining occurring by receiving a first logic result when light is detected, and a second logic result when light is not detected.

43. (Newly Added) The method of claim 42, wherein the logic circuitry further comprises:
an input from the product delivery system;
an input from the optical circuitry; and
an output from a comparison circuit, whereby the output comprises of a resulting comparison between the input from the product delivery system and the input from the optical circuitry, wherein the resulting comparison determines if a delivery attempt by the product delivery system resulted in an actual delivery of the product to the receiving position.

44. (Newly Added) The method of claim 41, wherein the light is an infrared light.

45. (Newly Added) The method of claim 41, wherein each of the plurality of light emitters is aligned approximately across from the corresponding light detector, wherein the delivery path lies in between the plurality of light emitters and the corresponding light detectors.

46. (Newly Added) The method of claim 41, wherein the plurality of discrete light beams are aligned such that the spacing between the beams accounts for a smallest product that transitions through the delivery path.

47. (Newly Added) The method of claim 41, wherein the power of the plurality of light beams is adjusted to compensate for ambient light effects.

48. (Newly Added) The method of claim 41, wherein the power of the plurality of light beams is adjusted to compensate for reflected light effects.

49. (Newly Added) The method of claim 41, wherein the reporting circuitry further comprises a data storage device for storing information concerning the customer order.

50. (Newly Added) The method of claim 41, wherein the reporting circuitry further comprises a logic circuit for determining whether to offer another vend attempt to the customer based upon a comparison between the result and a predetermined rule.

51. (Newly Added) The method of claim 41, wherein the delivery of a set of products is prevented if a product delivery is not detected.

52. (Newly Added) The method of claim 41, wherein the reporting circuitry further comprises a display device wherein an operator can retrieve the information.

53. (Newly Added) A method of enabling verification of the delivery of an ordered product within a vending system, the method comprising:

providing an ordering system for receiving a customer order of a product;

providing a product delivery system for sending the product located in a first product storage position through a delivery path to a second product receiving position;

providing a monitoring system located along the delivery path for detecting when the product passes through the delivery path from the first position to the second position, the monitoring system optically scanning the delivery path for the product transition and including:

at least one light emitting source;

at least one light detection source, wherein the at least one light detection source detects a change in a light from the light-emitting source; and

an optical detection aperture, wherein the aperture is used to reduce the range of incident angles of light that may be detected by the at least one light detection source; and

providing a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order.

54. (Newly Added) A method of enabling verification of the delivery of an ordered product, the method comprising:

providing an ordering system for receiving a customer order of a product;

providing a product delivery system for sending the product located in a first product storage position through a delivery path to a second product receiving position;

providing a monitoring system located along the delivery path for detecting when the product passes through the delivery path from the first position to the second position, the monitoring system optically scanning the delivery path for the product transition and including:

at least two light emitting sources;

at least two light detecting sources; and

a controller that sends a signal to a first one of the at least two light emitting sources activating and then deactivating the first one of at least two light emitting sources,

wherein the signal is cycled by the controller to a next emitting source of at least two light emitting sources after expiration of a first set time period, and

wherein an emitter cycle in which the signal is cycled by the controller to all of the at least two light emitting source is completed within a second time period, wherein the second time period is determined by a shortest delivery path travel time of a product; and

providing a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order.

55. (Newly Added) A method of enabling verification of the delivery of an ordered product in a vending system, the method comprising:

providing an ordering system for receiving a customer order of a product;

providing a product delivery system for sending the product located in a first product storage position through a delivery path to a second product receiving position;

providing a monitoring system located along the delivery path for detecting when the product passes through the delivery path from the first position to the second position, the monitoring system optically scanning the delivery path for the product transition and including:

at least one light emitting source;

at least one light detection source, wherein the at least one light detection source detects a change in a light from the light-emitting source, and

wherein the at least one light emitting source and the at least one light detection source are aligned such that the spacing between detectible beams accounts for the smallest product that transitions through the delivery path,

wherein the detectible beams comprise light emitted from the at least one light emitting source and detected by an aligned detector and two detectors adjacent to the aligned detector; and

providing a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order.

56. (Newly Added) A method for enabling verification of delivery of an ordered product in a vending system, the method comprising:

providing an ordering system for receiving a customer order of a product;

providing a product delivery system for sending the product located in a first product storage position through a delivery path to a second product receiving position;

providing a monitoring system located along the delivery path for detecting when the product passes through the delivery path from the first position to the second position, the monitoring system optically scanning the delivery path for the product transition and including:

at least two light emitting sources; and

at least two light detecting sources; and

a reporting circuitry electronically coupled to the monitoring system, wherein the reporting circuitry reports the result of the customer order,

wherein the reporting circuitry further comprises a logic circuit for determining whether to offer another vend attempt to the customer based upon a comparison between the result and a predetermined rule, and

wherein delivery of all products is prevented if a product delivery is not detected.

57. (Newly Added) A method of monitoring operation of a vending machine comprising:
- providing an ordering system for accepting customer orders;
 - providing a delivery path through which a product ordered by a customer from the ordering system travels;
 - providing a set of signal emitting devices located along the delivery path and sequentially emitting a signal;
 - providing a set of signal detecting devices located across the delivery path from the set of signal emitting devices, at least one signal detecting device of the set of signal detecting devices being aligned with a corresponding signal emitting device of the set of signal emitting devices, the at least one signal detecting device having at least one adjacent signal detecting device, the at least one signal detecting device and the at least one adjacent signal detecting device operable to receive the signal from the corresponding signal emitting device; and
 - providing a logic circuit connected to set of the signal detecting devices, the logic circuit determining whether a product is delivered along the delivery path from an output of the set of signal detecting devices.

58. (Newly Added) A method of monitoring operation of a vending machine comprising:
optically scanning a delivery path through which a product ordered by a customer travels using a linear array of emitters on one side of the delivery path and a linear array of detectors on an other side of the delivery path, wherein a first emitter with the array is actuated alone, a second emitter within the array is actuated alone, and each remaining emitter within the array, if any, is successively actuated alone until all emitters within the array have been actuated.
59. (Newly Added) The method of claim 58, wherein, once all emitters within the array have been actuated, actuation of the first, second and any remaining emitters is repeated in cyclic fashion.
60. (Newly Added) The method of claim 59, wherein a period required for all emitters within the array to be actuated at least once is less than a period required for a product to pass through a portion of the delivery path scanned by the emitters and detectors.

61. (Newly Added) A method of monitoring operation of a vending machine comprising:

optically scanning a delivery path through which a product ordered by a customer travels using a linear array of emitters on one side of the delivery path and a linear array of detectors on an other side of the delivery path, wherein each emitter within the array is individually actuated together with two or more corresponding detectors to detect passage of the product through the delivery path by interruption of light received at any of the two or more corresponding detectors from the respective emitter.